SANYO

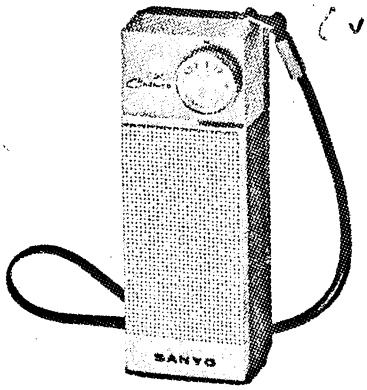
E — B
C

7 Transistor Portable Radio with Rechargeable Batteries

MODEL 7C-307(A)

SERVICE MANUAL

SANYO ELECTRIC CO., LTD.
INTERNATIONAL DIVISION: SANYO ELECTRIC TRADING CO., LTD.
OSAKA, JAPAN



SPECIFICATIONS

Frequency Range ..... 530-1,605 Kc
Intermediate Frequency ..... 455 Kc
Transistors ..... 2SC184 ..... Frequency converter
2SC183 ..... 1st IF amplifier
2SC183 ..... 2nd IF amplifier
2SC183×2 ..... Audio amplifiers
2SB22×2 ..... Power amplifier
Diode ..... 1S188 ..... Detector & A.G.C.
Thermistor ..... SDT-09 ..... Operation compensator
Sensitivity (for 10 mW output) ..... 280 μV/m
Distortion (at 50 mW output with 5 mV/m input) 4%

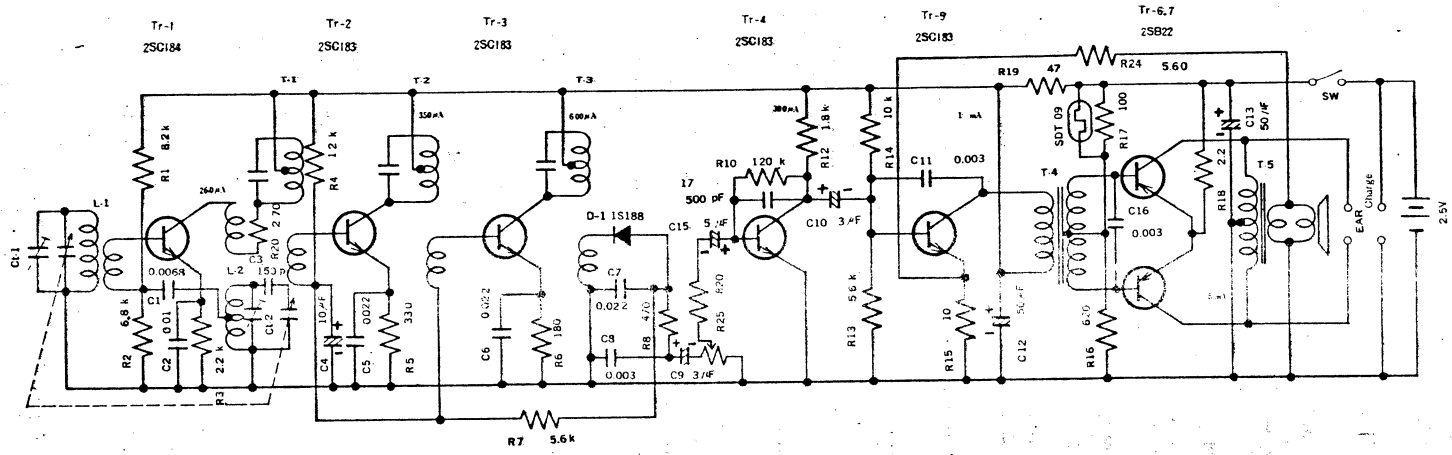
Output Power ..... Maximum ..... 140 mW
Undistorted ... 80 mW
Loudspeaker ..... 1″×2″ permanent dynamic type
Voice coil impedance 8 ohms
Current Drain ..... No signal 15 mA
Maximum 115 mA
Battery ..... Two 1½-volts Nickel Cadmium batt.
Power Supply Voltage (for recharging)
..... AC 100-120 volts (for 7C-307)
..... AC 220-240 volts (for 7C-307A)
Dimensions ..... 1½″ wide×4″ high×1⅛″ thick
Weight ..... 1/3 pound

ALIGNMENT PROCEDURES

Apply volt-meter across the voice coil.
Volume control should be set at its maximum response.
Output of signal generator should not be higher than necessary to obtain proper meter reading in order to avoid AGC function.

STEP	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	ADJUST FOR MAXIMUM OUTPUT
IF ALIGNMENT				
1	Radiate signal thru loop antenna which connected with signal generator output cable.	455 Kc	Lower end	IF transformers T3 T2 T1
RF ALIGNMENT				
2	Radiate signal thru loop antenna which is connected with signal generator output cable.	530 Kc	Lower end	Oscillator coil L2
3		1650 Kc	Upper end	Osc. trimmer Ct2
4		Repeat steps 2 and 3.		
5		600 Kc	600 Kc	Antenna coil L1
6		1400 Kc	1400 Kc	Antenna trimmer Ct1
7		Repeat steps 5 and 6.		

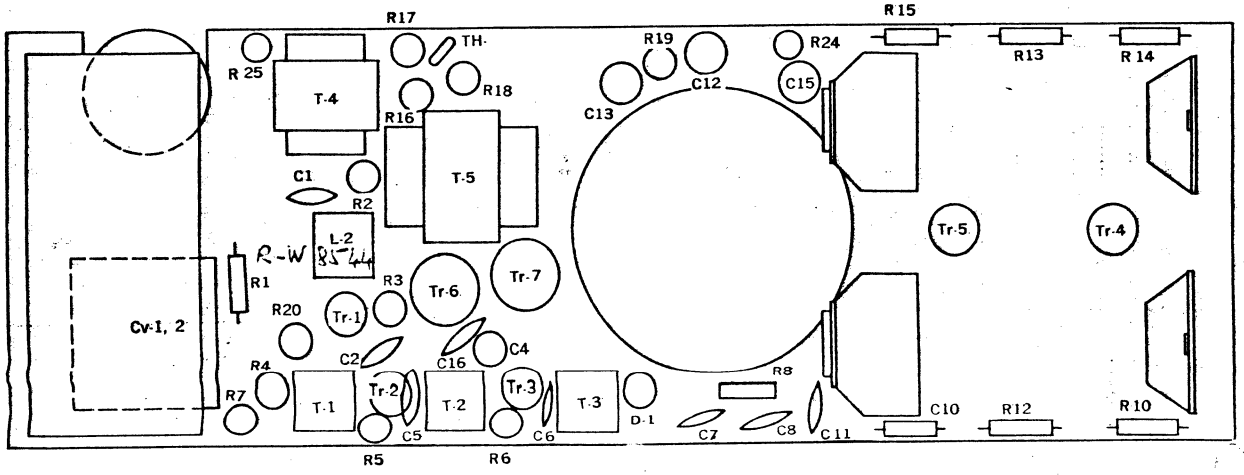
CIRCUIT DIAGRAM



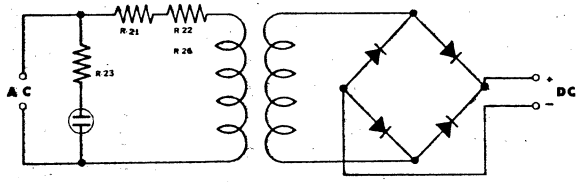
MEASURED VOLTAGES DEVELOPED ON TRANSISTORS (in volts)

	Tr-1	Tr-2	Tr-3	Tr-4	Tr-5	Tr-6& Tr-7
COLLECTOR	2.4	2.4	2.4	1.8	2.3	0
BASE	1.15	0.72	0.72	0.7	0.75	2.3
EMMITER	0.57	0.11	0.11	0	0.01	2.5

ELECTRIC PARTS IDENTIFICATION



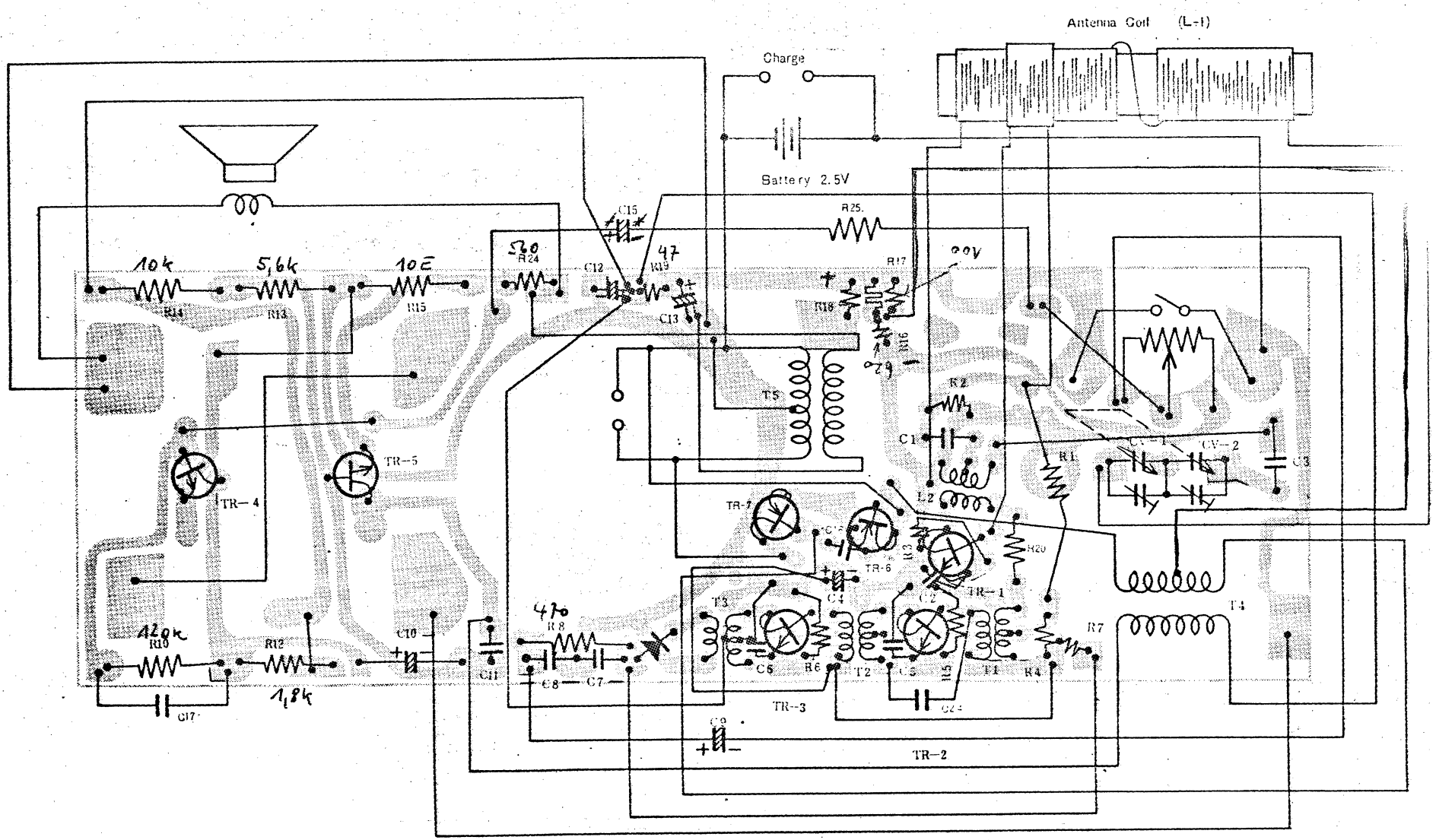
RECHARGER CIRCUIT



Stock No.	Description	Q'ty
	(7C-307 only)	
R23	Resistor 180K ohms ±20% ¼W Solid	1
R21 R22	〃 11K 〃 ± 5% ½W 〃	2
	(7C-307A only)	
R23	Resistor 470K ohms ±10% ¼W Solid	1
R21 R22	〃 18K 〃 ± 5% ½W 〃	2
R26	〃 20K 〃 〃 〃 〃	1

INTER-PARTS WIRING ILLUSTRATION

7C-307A



PARTS LIST

Stock No.	Description	Q'ty
	CABINET	
R-	Cabinet Assembly - composed of below 6 parts	1
-R-315108	Cabinet - front enclosure	1
-R-285021	Die-cast Metal	1
-R-265319	Punched Metal	1
-R-425991	Double-face Sticky Tape	1
-R-315109	Back Cover - rear enclosure	1
-R-265320	Printed Metal - 7C-307 only	1
-R-265524	Printed Metal - 7C-307A only	1
R-S85163	Hand Strap	1
R-395047	Tuning Knob	1
R-265321a	Dial Disc	1
R-395048	Volume Knob	1
R-475270	Specification Sheet - 7C-307 only	1
R-475413	Specification Sheet - 7C-307A only	1
R-25087	Speaker mtg Metal	2
R-365054	Plastic Cover - yoke of speaker	1
R-245202	Stud Nut - back cover	1
R-245258	Stud Nut - P.C. Board	1
R-115231	Metal Angle - P.C. Board	1
	CHASSIS	
R-415128b	Printed Circuit Board	1
R-115232	Mounting Metal - volume control	1
R-245203	Mounting Metal - tuning knob	1
R-355090	Holder - antenna coil	1
R-255081	Battery Terminal (+) - 7C-307A only	2
R-255082	Battery Terminal (−) - 7C-307A only	2
R-365053	Plastic Cover - transistors	1
	ELECTRIC	
R-C1514	Variable Capacitor - (tuning capacitor)	1
R-R110510	Variable Resistor - (volume control)	1
R-S6595	Speaker 1"×2½" 8 ohms	1
R-S6589	Earphone	1
R-W2568	Antenna Coil L1	1
R-W8544	Oscillator Coil L2	1
R-W5T561	IF Transformer T1	1
R-W5T562	IF Transformer T2	1
R-W5T563	IF Transformer T3	1
R-W6578	Input Transformer T4	1
R-W6579	Output Transformer T5	1
R-C0502a	Trimmer Capacitor Ct2	1
R-C0503	Trimmer Capacitor Ct1	1
R-C9542	Electrolytic Capacitor 50μF 3V C12, C13	2
R-C9546	〃 3μF 3V C9, C10	2
R-C9550	〃 10μF 3V C4	1
R-C9554	〃 5μF 3V C15	1
R-S1575	Ni-Cd Battery (N-225AA) - 7C-307 only	2
R-S1233	Ni-Cd Battery (N-225AA) - 7C-307A only	2
*R-S85133a	Earphone Jack	1
R-S85171	DC Jack - recharging	1
R-S3140	AC Cord - 7C-307 only	1
*R-S3528	AC Cord - for 250V - 7C-307A only	1
R-S8574b	AC Plug Adaptor 19 mm - 7C-307A only	1
R-S8575b	AC Plug Adaptor 16.7 mm - 7C-307A only	1
2SC184	Transistor Tr1	1
2SC183	〃 Tr2, Tr3 (beta of L-class)	2
2SC183	〃 Tr4, Tr5	2
2SB22	〃 Tr6, Tr7 (no color or yellow)	2
1S188	Diode	1
SDT-09	Thermistor	1

Stock No.	Description	Q'ty
	RECHARCER BOX	
R-485080	Recharger Box - main body	1
R-315153	Inside Plastic Cover	1
R-315152	Plastic Lid - "Rechargeable"	1
R-325149	Plastic Sleeve - AC inlet	1
R-245257	Special Screw - stud nut	2
R-265489	Name Plate - "SANYO" - 7C-307 only	1
R-265525	Name Plate - "SANYO" - 7C-307A only	1
R-265492	Marking Metal - AC power - 7C-307 only	1
R-265526	Marking Metal - AC power - 7C-307A only	1
R-245209	Contact Pin - DC terminal	2
R-245210	Metal Washer - Contact Pin	2
R-23439	Lead Lug	2
R-245229	Stud Nut - P.C. Board	2
R-415171	Printed Circuit Board	1
R-32424a	Plastic Reinforcer - Terminal Tip	1
R-24792b	Terminal Tip - AC inlet	2
R-255094	Metal Spring - Neon Lamp	1
R-S1146b	Neon Lamp	1
R-W7511	Power Transformer T6	1
R-S1244	Selenium Rectifier	1

Symbol No.	Description	Q'ty
	CAPACITORS & RESISTORS	
C1	0.0068μF ±20% 50WV Mylar Square type 4.5×9.5×2.4	1
C2	0.01μF 〃 35WV 〃 〃 〃	1
C3	150pF ±10% 25WV Styrol Tubular	1
C5 C6 C7	0.022μF ±20% 35WV Mylar Square type 5.3×9.5×3.3	3
C8 C16	0.003μF ±20% 50WV 〃 〃 4.5×9.5×2.4	2
C11	0.003μF ±10% 50WV 〃 〃 〃	1
C17	500pF ±20% 〃 Ceramic Square type (RD-200)	1
C24	1pF ±0.5pF 〃 Ceramic Disc or Square type	1
R1	8.2K ohms ± 5% ⅛W Solid composition	1
R2	6.8K 〃 ±10% 1/32W Carbon film P	1
R3	2.2K 〃 〃 *	1
R4	12K 〃 ± 5% *	1
R5	330 〃 ±10% *	1
R6	180 〃 〃 *	1
R7	5.6K 〃 ± 5% *	1
R8	470 〃 ±10% 1/32W Carbon film P	1
R10	120K 〃 〃 ⅛W Solid composition	1
R12	1.8K 〃 〃 〃 〃	1
R13	5.6K 〃 〃 〃 〃	1
R14	10K 〃 ± 5% 〃 〃	1
R15	10 〃 ±10% 〃 〃	1
R16	*620 〃 ± 5% 〃 〃	1
R17	100 〃 ±10% 〃 〃	1
R18	2.2 〃 〃 *	1
R19	47 〃 〃 1/32W Carbon film	1
R20	270 〃 〃 *	1
R24	560 〃 〃 ⅛W Solid composition	1
R25	820 〃 〃 1/32 W Carbon film	1

Marks (*) in wattage column mean 1/8 or 1/32 watt. Resistors of either wattage can be used.

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